Benjamin Stockton

PhD Candidate & Research Assistant

Education

2019-Present **PhD Candidate in Statistics**, *University of Connecticut*, Storrs, CT.
- ○ GPA: 3.85
- ○ Courses: Applied Statistics I & II, Mathematical Statistics I & II, Linear Models I & II, Design of Experiments, Inference I & II, Probability I & II, Intro to Nonparametric Statistics, Intro to Time Series, Bayesian Data Analysis, Intro to Multivariate Statistics, Bioinformatics, Intro to Machine Learning, Data Visualization and Communication

2016-2019 **Bachelors of Science in Mathematics (Emphasis in Statistics)**, *University of Wisconsin-Whitewater*, Whitewater, WI.
- ○ Minor in Computer Science
- ○ GPA: 3.87
- ○ Courses: Calculus III, Linear Algebra, Intro to Real Analysis, Abstract Algebra I, Intro to Topology, Applied Statistics, Mathematical Statistics I & II, Regression Analysis, Intro to C++, Intermediate Programming, Data Structures, Programming Languages, Algorithms, Assembly Programming

2015-2016 **Bachelors of Science (Undeclared)**, *University of Wisconsin-Madison*, Madison, WI.
- ○ GPA: 3.65
- ○ Courses: Calculus I & II

Publications (Accepted & In Progress)

1. Strange, C. C., Stockton, Benjamin, Zvonkovich, J., & Harel, O. (2024). *(Submitted to Justic Quarterly) multiple imputation using pattern-mixture modeling to assess the sensitivity of race/ethnicity effect estimates in sentencing given non-ignorable incomplete data.*

2. Stockton, Benjamin, Strange, C. C., & Harel, O. (2023). Now You See It, Now You Don't: A Simulation and Illustration of the Importance of Treating Incomplete Data in Estimating Race Effects in Sentencing. *Journal of Quantitative Criminology.* `https://doi.org/10.1007/s10940-023-09577-w`

3. Stockton, Benjamin, & Harel, O. (2024). *(Submitted to the Journal of Computational and Graphical Statistics) Regression analysis of incomplete data with novel imputation methods for angular predictors.*

4. Stockton, Benjamin, & Harel, O. (2023). *(In Progress) Imputation of Incomplete Angular Time Series Data.*

5. Sidi, Y., Stockton, B., & Harel, O. (2024). Non-inferiority Clinical Trials: Treating Margin as Missing Information. *The New England Journal of Statistics in Data Science*, 1–8. `https://doi.org/10.51387/24-NEJSDS57`

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 benjamin-stockton

Work and Research Experience

June 2021 - Present
Research Assistant, *University of Connecticut*, Storrs, CT.
- Supplemental Grant for NSF Grant # 2015320
- Overall NSF grant is for developing a model to classify bovid teeth fragments from hominid archeological site by species. This problem requires solving missing data problems in the context of shape analysis.
- Supplement is for my studies and research as an underrepresented minority hispanic student. The research goal of the grant is to develop missing data methods in the context of directional data including developing multiple imputation strategies for directional data in regression, time series, and spatio-temporal contexts.
- I have developed a novel imputation method for angular data based on predictive posterior draws from a projected normal regression to be used in multiple imputation. I have also spent time investigating potential methods for classification and clustering of incomplete angular and directional data.
- The models developed for this grant are written in R and Stan and validated through simulation study on the University of Connecticut High Performance Cluster (HPC).

June 2022 - Present
Interdisciplinary Projects, *University of Connecticut*, Storrs, CT.
- A collaboration between my advisor, Ofer Harel, C. Clare Strange, assistant professor of criminology and justice studies at Drexel University, and myself where we illustrated the impacts of using complete case analysis for incomplete data analysis via simulation studies on the impacts of racial identity in sentencing decisions.
- github.com/benjamin-stockton/missing-data-criminology

June 2019 - July 2019
Data Science Leadership Development Program Intern, *Travelers Insurance Co.*, Hartford, CT.
- For the internship, I worked on a classification problem using XGBoost models and Natural Language Processing using python and various python packages such as pandas, numpy, scikit-learn, xgboost, and huggingface.

June 2019 - July 2019
Colorado Summer Institute in Biostatistics (CoSIBS) Participant, *Colorado School of Public Health*, Aurora, CO.
- I took an introductory course in applied biostatistics and methods of biostatistics.
- The program concluded with a project for which we analyzed and replicated the analysis of a paper on a clinical trial on the effectiveness of a new anti-malaria treatment.

January 2018 - May 2019
Undergraduate Research Assistant, *Department of Mathematics, University of Wisconsin-Whitewater*, Whitewater, WI.
- Used College Algebra enrollment and course data to analyze how to more effectively place students in either standard or Moving Up sections using multiple measures.

May 2018 - July 2018
Valparaiso University Mathematics REU Participant, *Valparaiso University & NSF*, Valparaiso, IN.
- Member of a three person that completed a research project on the optimal credit-worthiness threshold of a bivariate distribution.

June 2017 - May 2019
Undergraduate Research, *Department of Mathematics, University of Wisconsin-Whitewater*, Whitewater, WI.
- Interdisciplinary research project between Mathematics, Computer Science, and Psychology Departments focused on developing a web application to analyze the progression of STEM majors to graduation at UW-Whitewater.
- Assisted with data collection and visualization of baseball data for statistical research with other undergraduate math students.

October 2016 - May 2017	**Undergraduate Research Assistant**, *Department of Mathematics, University of Wisconsin-Whitewater*, Whitewater, WI.
	○ Worked with Math department enrollment data to better understand what factors cause students to change majors and course paths.
August 2015-August 2016	**Student Hourly for the Survey of the Health of Wisconsin**, *School of Medicine and Public Health, University of Wisconsin-Madison*, Madison, WI.
	○ As a student hourly employee, assisted with administrative tasks required by the study including scheduling appointments, preparing lab kits, scanning documentation, in-depth use of databases, preparation of materials for participant selection, and more tasks.

Presentations

2023	Student Workshop on Statistical Computing. 'Getting to Know Stan'
2023	NESS Invited Session. 'Multiple Imputation with Angular Covariates: Imputing Incomplete Angular Data with Projected Normal Regression'
2023	ENAR Invited Session. 'Incomplete data in non traditional settings : Angles, Functions, and Shapes'
2018	National Conference on Undergraduate Research. Oral presentation on research from the project for evaluating undergraduate STEM student academic success'
2018	Indiana Mathematics REU Conference. Oral presentation on research on thresholds for credit-worthiness based on a bivariate distribution

Mentoring

September 2022 - Present	**Undergraduate Research Mentor**, *University of Connecticut*, Storrs, CT.
	○ Mentoring Sana Gupta, an undergraduate in statistics, on a project analyzing survey responses on motivations for exercising conducted by Katherine Gnall, a doctoral student in psychology. The project will be the basis for Sana's honors thesis.

Teaching

January 2024 - Present	**Teaching Assistant**, *Department of Statistics, University of Connecticut*, Storrs, CT.
	○ Primary Instructor for STAT 3025Q: Statistical Methods
August 2019 - May 2021	**Teaching Assistant**, *Department of Statistics, University of Connecticut*, Storrs, CT.
	○ Fall 2019 and Spring 2020 - Teaching Assistant for STAT 1000Q : Introduction to Stats I with Instructor Robert Apruzese
	○ Fall 2020 and Spring 2021 - Teaching Assistant for STAT 1100Q : Elementary Concepts of Statistics with Instructor Kathleen McLaughlin
September 2018 - May 2019	**Learning Assistant**, *Department of Mathematics, University of Wisconsin-Whitewater*, Whitewater, WI.
	○ Fall 2018 - Learning Assistant for Intro to Applied Statistics for Dr. Khyam Paneru. I primarily assisted students with learning to use R and applying R to statistical analysis for a final project.
	○ Spring 2019 - Learning Assistant for Introduction to Real Analysis for Dr. Wesley Hough

September 2016 - May 2018	**Tutor in the Math Learning Center**, *Department of Mathematics, University of Wisconsin-Whitewater*, Whitewater, WI.
	○ General tutor for courses including Pre-Algebra, Quantitative Reasoning, College Algebra, Finite Mathematics, Pre-Calculus, Calculus I, Calculus II, Calculus III, and Intro to Statistics

Recognition & Awards

2023	Summer Fellowship Award. Department of Statistics, University of Connecticut
2016 - 2019	University of Wisconsin-Whitewater Dean's List. Each semester from Fall 2016 through Spring 2019
2018	'Best Use of Data' Poster Award. University of Wisconsin-Whitewater Assessment Day for undergraduate research project on the academic progress of STEM undergrads.
2018	Marion B. Schlicher Scholarship.
2017	CK Flanagan Scholarship.
2016	University of Wisconsin-Madison Dean's List. Spring 2016
2015	UW-Madison Fort Atkinson Alumni Chapter/Pellegrin Scholarship. Fort Atkinson Community Foundation
2015	Theodore W. Batterman Scholarship. Fort Atkinson Community Foundation
2010	Helen Rose Inspire-a-Dream Scholarship.

Workshops (Attended)

2023	Field of Dreams Conference presented by the Math Alliance.
2023	JSM Diversity Mentoring Program.
2023	ENAR Fostering Diversity Workshop.
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2022	JSM Diversity Mentoring Program.
2022	ENAR Fostering Diversity Workshop.
2021	JSM Diversity Mentoring Program.
2021	ENAR Fostering Diversity Workshop.

Manuscript Reviewer

2024	BMC Medical Research Methodology.